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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,349	02/15/2006	Gerardus Hubert	NL02 0872 US	5045

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EXAMINER

YAARY, MICHAEL D

ART UNIT	PAPER NUMBER
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2193

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,349	Applicant(s) HUBERT, GERARDUS	
	Examiner MICHAEL YAARY	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-15 are pending in the application.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 15 recites "computer readable medium," however, the specification provides no antecedent basis for computer readable medium and does not further define what comprises the computer readable medium.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

- (i) Claims 1 and 8 are directed to a method and apparatus that merely perform calculations and manipulation of data. In order for such a claimed invention to be statutory, the claimed invention must accomplish a practical application. That is the claimed invention must transform an article or physical object to a different state or thing, or produce a useful, concrete, and, and tangible result; see State Street 47,

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USPQ2d. It is clear from independent claims 1 and 8 that the claimed invention merely involves calculations and manipulations of data; that is in calculating a product of two numbers. The result produced by the invention, as recited in the claims, does not have a real world value but merely a number without a practical application that makes the result useful, concrete, and tangible. Therefore, independent claims 1 and 8 are directed to non-statutory subject matter as the claimed invention fails to accomplish a practical application.

(ii) Claims 2-7 and 9-15 are rejected for similar reasons as discussed for their respective parent claims, as they fail to present any limitations that resolve the deficiencies of the claims from which they depend.

(iii) Claim 1 is directed to a method claim. However, the claim lacks either 1) being tied to another statutory class (such as a particular apparatus) or 2) transforming underlying subject matter to a different state or thing (*In re Bilski*). Thus, the method claim is directed to non-statutory subject matter.

(iv) Claims 2-7 are rejected for similar reasons as discussed for their respective parent claim, as they fail to present any limitations that resolve the deficiencies of the claim from which they depend.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hollmann et al. (hereafter Hollmann)(US Pat. 6,366,673).

7. **As to claims 1, 8, and 15**, Hollmann discloses a method for calculating the product P of a first number X and a second number Y, modulo N, where Y is partitioned into j words each of length p bits, and X has a length (m+n) bits (abstract and column 3, lines 23-30), comprising the steps of:

Initializing a product register, P (column 5, lines 34-41);

Loading a first one of the j words of Y into a multiplier; multiplying the loaded word of Y by X to form an intermediate product T (column 5, lines 16-41);

Updating the product register P with the sum of T and $P \cdot 2^p$ (column 5, lines 16-41 where $z_i = x \cdot y_i + Z_{i+1} \cdot 2^b$);

Reducing the contents of the product register P by subtraction of a value P_H ($N'/2$) (column 4, lines 21-23 and equation 9);

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Loading a successive one of the j words of Y into the multiplier and repeating steps c) to e) for each one of the j words of Y , wherein N' is an integer multiple of N , and the value N' is selected such that $(m-1)$ most significant bits are equal to 1 and the least significant bit is 0 (column 5, lines 16-41); and wherein P_H is selected as the $(p+2)$ most significant bits of P in the register (column 4, lines 21-23 and column 5, lines 16-41).

8. **As to claims 2 and 9**, Hollmann discloses the second number Y is also $(m+n)$ bits in length (column 3, lines 23-30).

9. **As to claims 3 and 10**, Hollmann discloses selecting $m \geq p+3$ (column 7, lines 57-column 8, line 8).

10. **As to claims 4 and 11**, Hollmann discloses selecting $(m+n)$ as a multiple of p bits (column 4, lines 1-24).

11. **As to claims 5 and 12**, Hollmann discloses using a $(p+2)*p$ multiplier to perform the multiplying step and for deriving the value $P_H (N'/2)$ (column 5, lines 16-41).

12. **As to claims 6 and 13**, Hollmann discloses the first one of the j words of Y loaded into the multiplier is the most significant word, and successive ones of the j words are loaded in decreasing order of significance (column 4, lines 1-34).

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13. **As to claims 7 and 14**, Hollmann discloses a pipelined architecture, in which the multiplication step for successive cycle through steps c) to e) commences prior to completion of the subtraction step e) of the preceding cycle (column 3, line 46-column 4, line 38).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Pat. 5,499,299 – Modular arithmetic operation

US Pat. 6,282,290 – Modular exponentiator

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL YAARY whose telephone number is (571)270-1249. The examiner can normally be reached on Monday-Friday, 8:00 a.m - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. Y./

Examiner, Art Unit 2193

/Lewis A. Bullock, Jr./

Supervisory Patent Examiner, Art Unit 2193